BEDES Technical Working Group
Fifth Meeting—Monday April 21, 2014 (1:00-5:00 EDT)

Face-to-Face/Bi-Coastal/Video-Linked Meeting:
East Coast: U.S. DOE, 950 L'Enfant Plaza, Washington D.C. (rooms 6097-6099)
West Coast: LBNL, Building 90, Berkeley, CA (room 3122)

Meeting Summary
20 people participated in-person either at DC or Berkeley; 9 additional people participated via phone. (See Appendix 1 for participants)

1:00   Welcome, Introductions, and Today's Agenda
Rick welcomed everyone and Jonathan gave an overview of the agenda and day's objectives.

1:10   Review of Module I
Robin Mitchell went over the logistics of posting to the forum via Google drive and email and went over the spreadsheet layout and content. May 12th is the end date for Module I comments.

Summary:
Some Module I issues concerning cutting down on redundancy and opening up implementation possibilities were also raised for discussion including:
- Changing "Fuel/Energy" to "Utility", "Commodity" or "Resources"
    - "Resources" was thought to be the most clear and better accommodate water
- LBNL proposed "Premises" to replace the notion of Facility and Activity Area
    - No consensus and some expressed concerned that premises might be confusing; Building ID was another option offered
    - It was suggested that validation rules, such as legal values, ranges, etc, could be added after Modules 1 and 2 are completed.
- Defining vs. deriving certain fields.
    - There was discussion about whether derived fields should be included; it was agreed that at least some calculated fields of high importance (such as EUI) should be included in BEDES. It was less clear about other derived fields. LBNL expressed concern about having derived fields without definitions which would lead to data purporting to be the same but which would be derived with different methods.
- Metadata: LBNL said it would be included in Module 2.

- Building geometry: how to define a relatively simple set of definitions that could give useful information about geometry (such as shape, perimeter lengths, orientation)

Occupancy classifications: LBNL presented their latest proposal, which included Occupancy Classification and Space Function. The completely generic implementation, which would allow any occupancy to be paired with any other occupancy, was not implemented. LBNL agreed to think about this some more after objections from a few stakeholders.

- Running Notes/Discussion:
    - Discussion of highlighted Module I issues (raised either by LBNL or TWG/Sub-Group members during review process)
        o "Premises" to replace the notion of Facility and Activity Area, among others
            ▪ Is this a generic term to cover all levels of spaces? It is not a general term to cover all of them like facility and complex?
                - Yes, this is mainly so that we can apply the definition. There is a "group" of terms that definitions can apply to like hallway, building, etc. We no longer have "building type". There is no separation of the different levels. This is an attempt to allow for flexibility later. You have this class and then everything falls underneath it. BEDES doesn't restrain an implementation from tying a piece of equipment to an area in a building.

            ▪ What is included in the "group"? Square foot?
            ▪ The distinction between premises and site is unclear
                - Site is the ground it is sitting on, and premises is the structure
            ▪ Will this confuse people as they apply it to different use cases?
                - If you are thinking about an export that follows BEDES definitions, you can map your data to export it. You don't have to internally change your world. If you have to change something internally, then we need to rethink this.
            ▪ "Premises" is too vague a term and could include things like landscape. Building ID is what we mostly use in our industry
            ▪ I would ask for one additional field, premises type, that identifies whether it is a complex type or building (activity area, or space within a building,
            ▪ If you have a complex and a space within a building, you are mixing layers that could cause confusion. I would like to see my layers kept separate.
                - That is an implementation issue .
                - Take this discussion to the forum topic

- Would site ID be the same as premises ID?
  - You don't have to choose fields you don't need for your application
  - The building ID would be the same as the premises ID if the premises was just a building
- Unique identifiers (for levels and groups)
  - You can have various IDs within one level (portfolio manager, nickname for the building, tax assessor ID). In terms of terminology, BEDES just needs to cover what unique ID means, and not cover all of the various types or which ones you should use. Constrained list vs on "unique ID" definition.
  - The constrained list ID is difficult because there are a lot of databases that are not being included here. Having a tool where you can define and match, which you are referring to.
  - SEED helps you with the "match" (you can have one to one or one to many). But it doesn't give you the ID. You may want to associate different unique IDs with different levels within the premises, which goes back to Dan's comment where you would want to track them.
  - The list of unique IDs will be large. We want the ability to have a multi selection of naming the ID and the ID number. If we are going to go the constrained list route, we may need the "other" field that we would continue to update. Is there value in maintaining the list as it changes and grows?
  - Include ID type?
    - Yes (CoStar, Tax, etc)
    - Those types of IDs should be standardized.
  - The ID would be alphanumeric
  - Smart software can adjust for format (dashes, hyphens)
  - In the Audit XML, there is some strict format of fields like phone numbers. If we need to be able to transfer data from one use case to another, it could be a problem. Do we want to accommodate inter-use case data transfer?
    - That might make sense where there is a standard (date, phone number), but it would be hard to do here because we might not know what those standards/cases are. Maybe we do need a "format" field.
    - In some cases, format is an implementation issue and software developers can make the translations in their software.
  - There are a bunch of fields from the RESO dictionary about tax data that have duplication around city property IDs in portfolio manager.
  - BEDES should include a format because one of the purposes of BEDES is to facilitate communication between tools

- Don't want to put constraints on all fields though. We could identify the key fields that need to communicate and add all of the necessary suggested formats/ranges.
  - LBNL can add ranges/formatting
- Like the idea of identifying the key fields
  - Changing "Fuel/Energy" to "Utility" or "Commodity" or "Resources"
    - Will help us accommodate water and reduce redundancies in the definition.
    - Someone had an objection because the type of data you collect for water is much different than that you collect for energy.
    - The characterization between fuel and water is different enough that you couldn't use the same descriptors.
  - Defining vs. deriving certain fields (e.g., annual electricity consumption, monthly demand, average monthly dry bulb temperature)
    - We are trying to avoid redundancies, and allow the ability to mix and match different terms to get what you are trying to define. "Annual energy consumption"…can be a field where other fields are combined to get at that number.
    - Just because a calculation can be made with the data that is in there, doesn't mean we shouldn't include the fields for the calculated fields. We should keep the "calculated" values as separate fields.
      - We need to think about who the end users are, and those are probably software developers, and they can come up with a method to pull it all together
    - Just because it can be derived, doesn't mean it should be.
      - We are trying to eliminate the redundancy and add more possibilities.
    - My concern is that we won't be able to roll it up into one field and apply the site to source conversion. Maybe there is a handful of very important calculated fields that are standardized
      - We still have some of the high level portfolio manager fields like "site energy use"
      - The fields we are proposing would really apply to someone who has interval meter data.
    - Withdraw objection now that it is clear that there are still the high level fields
  - Meta Data- What happened to having another sheet in the Google doc?
    - LBNL plans to add metadata in the next phase. It will apply to Module 1 and 2
  - Do we have a list of the components that will be included in the meta data?
    - There is a forum topic with a list of suggestions for meta data. There is a units question, which will be meta data.

- Add additional meta-data comments to the forum and it will be on the Module 2 agenda.
- Are the footprint shape names standard? Why is I-shape called that, sometimes it is H-Shape?
  - No reference for this?
  - Asset score has standard shapes
  - Current BEDES definition came from CEUS
  - Maybe LBNL can come up with a better mapping.
- Do we have a standard way to reference the sides of the shape? We currently just reference the perimeter, but no way to call out individual sides (H-shape side A, side B). Cardinal direction
  - Asset score has lettering for sides.
  - Doesn't have to be azimuth, just a standard way to distinguish between the sides
  - Want to be able to specify lengths of things, right now it is just perimeter
  - Do we still have a term called building shape, or is it now premises shape?
    - If we add the field, it could be whatever shape
  - Do we need a much larger set of selections then?
    - Is the shape relevant at the complex level?
  - You would just need to know the individual building shape, like 4 L-Shaped buildings at the site.
  - If we can add the basic definition of the shape, we can accurately capture the orientation
  - If LBNL leaves this term, they will try to figure out a way to designate how long and the orientation of sides. Perimeter aspect may come into it then.
  - Bob Hendron will take a crack at integrating this into the audit use case.
- Vertical abutments?
  - Module 2, Maybe put with envelope
- Normalization of addresses (there are multiple address fields which all have the same structure, but apply to a different entity). There can be one set of terms to define an address and then a "types" modifier to define how the address is used (modeler, contractor, etc.)
  - I support this. If something needs context within the definition or field, you would include it in the field. There are limits to how far we can especially on the system side.
- Why is "units" a first class term under energy use and not anywhere else? (under site/premises/etc)
  - It is inconsistent. For other fields with units LBNL proposed to always use Inch-Pounds as units.
- Can we call it "resource use units"

- Occupancy classification (single family detached, single family attached) how about single family alone. If we just say "multifamily" does that include all of the types?
  - Objection to proposed method:
    - I thought that we were going to have one term and then modifiers to build it (Single family, and then the modifiers)
    - We decided to allow whatever combinations, like a refrigerated office, and not think about what the user is defining
  - If BEDES is a dictionary, the definitions are lost using the modifier method. Suggest we have a separate conference call to think about this more.
  - Need to look at this again.

3:15 **Module 2 Overview**

Robin Mitchell presented overview of Module 2 content and structure. Discussed possibility of project data fields, financial data fields, and the general granularity of data fields. BEDES will allow the use cases to dictate addition of fields and has no bounds for granularity.

- Module 2 will look like Module 1 in terms of structure and level of detail
- There is a category in the Audit use case that isn't here. It is the "scenario data" or "package of measures", the NPV, economics, etc and the benchmarking data (portfolio manager data).
  - Characterizing the savings might be different when you combine measures. If you make a set of packages, then it would figure out the energy savings of the entire package, not measure by measure.
- Bob: "project" might be a more generic term that is broader than individual measure stuff, so it could capture soft cost. Energy and cost data is repeated but for a different use.
  - For BEDES, we just need to make sure we have defined all of the fields and you can combine them to use them.
- There are fields missing that impact at the project level for retrofits.
  - The BEDES dictionary just needs to cover what the use cases need.
  - We need to have some internal coordination here between the audit use case, e-Project Builder and others.
- Financial
  - The Audit use case doesn't have NPV as a field because that would imply that there is a standard method for calculating it.
    - Could have a field where you could share your formula? You can have fields for Discount rate, year 1, year 2, etc.
  - Options to explore: if there are a small set of options for how something is calculated, then we can provide a limited list to select from or allow the option to list the formula.
  - The inputs are what are fluctuating

- Granularity of data
  - Where do we draw the line in terms of useful data as we move into these highly technical issues (test data results)?
  - From a program implementer standpoint, what do you need for compliance?
  - We want the dictionary to be useful, so, time permitting, we could go pretty granular
- Normalization
  - LBNL does not want to repeat data over and over again with similar characteristics.

Appendix 1: TWG Meeting Participants

Participants at DOE

1. Steve Abercrombie
2. Elena Alschuler
3. Magnus Cheifitz
4. Julie Caracino
5. Marshall Duer-Balkin
6. Robert Hendron
7. Steve Kismohr
8. Jessie Knapstein
9. Jonathan Raab
10. Nora Wang
11. Dan Winters
12. Amir Roth

Participants at LBNL

1. Marc Costa
2. Devan Johnson
3. Avery Kintner
4. Rick Diamond
5. Shankar Earni
6. John Mejia
7. Andrea Mercado
8. Robin Mitchell

Phone Call-in

1. Dan Fehrenbach
2. Supriya Goel
3. John Keck
4. Chris Tremper
5. Daniel Studer
6. Darren Port NEEP
7. Jasyon Antonoff
8. Erik Larson
9. Barbara Hernesman